



UNIVERSITI PUTRA MALAYSIA

**IMPACT OF AFTA ON MALAYSIAN TRADE FLOWS:
AN EMPIRICAL ANALYSIS BASED ON GRAVITY MODEL**

GOH LIM THYE

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By
GOH LIM THYE

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirements for the Degree of Master of Science**

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirements for the degree of Master of Science

IMPACT OF AFTA ON MALAYSIAN TRADE FLOWS: AN EMPIRICAL ANALYSIS BASED ON GRAVITY MODEL

By

GOH LIM THYE

August 2002

Chairman : Associate Professor Dr. Tan Hui Boon

Faculty : Economics and Management

The main purpose of this study is to empirically examine the trade linkages among ASEAN countries with existing of AFTA using gravity model. To achieve the objectives, the multivariate relationship between the trade flows and the four macroeconomic variables are tested through multivariate Johansen cointegration tests and multivariate Granger causality tests based on VECM and also the Impulse Response Function are applied to capture the dynamic linkages among the macroeconomic variables.

Annual data covering the period from 1965 to 2000 was utilized in this study. The ASEAN countries concerned in this study are Indonesia, Malaysia, Philippines, Singapore and Thailand.

The empirical results of this study indicates that the macroeconomics variables as concerned by Erkkilä-Widgren and Meronen gravity model are found to be significantly cointegrated for both export flows and import flows of Malaysia within the ASEAN countries in long run. However, in short run the evidences of the

Granger causality between trade flows and macroeconomic variable is only significant determinant in certain countries as proven by multivariate Granger causality test based on VECM

Under the impulse response function framework, dynamic linkages between Malaysian trade flows and macroeconomic variables are identified. The results indicate that AFTA and population are positively cointegrated with Malaysian trade flows, whereas GDP per capital of the observed ASEAN countries and distance are negatively cointegrated with Malaysia trade flows.

This study thus implies that an efficient trade agreement in ASEAN region will promote a better performance of a country's trade flows. This in turn will create more employment opportunities and stimulate economic growth.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Master Sains

**KESAN AFTA TERHADAP PENGALIRAN PERDAGANGAN
MALAYSIAN: PENGAJIAN SECARA EMPIRIKAL BERASASKAN
GRAVITI MODEL**

By

GOH LIM THYE

Ogos 2002

Pengerusi : Profesor Madya Dr. Tan Hui Boon

Fakulti : Ekonomi dan Pengurusan

Tujuan utama kajian ini adalah menggunakan gravity model untuk mengaji hubungan diantara perdagangan Malaysia dengan negara-negara ASEAN dengan kewujudan AFTA. Untuk mencapai objektif tersebut, hubungan multivariate antara pergaliran perdagangan dengan empat angkubah makroekonomi telah dikaji melalui ujian kointegrasi multivariate Johansen dan ujian perhubungan Granger berasaskan VECM. Tambahan pula Fungsi Tindak Balas juga diaplikasikan untuk mengenaspasti hubungan dinamik antara pembolehubah makroekonomi.

Data tahunan yang merangkumi tahun 1965 sehingga tahun 2000 telah digunakan bagi tujuan kajian ini. Negara-negara ASEAN yang dikenapasti untuk tujuan kajian ini termasuk negara Indonesia, Malaysia, Philipina, Singapura dan negara Thai.

Keputusan empirikal dalam kajian ini menunjukkan bahawa pembolehubah makroekonomi yang dikenalpasti oleh rangka gravity Erkkilä-Widgren and

panjang. Walaubagaimanapun, dalam jangkamasa pendek hanya sesetengah negara dapat membuktikan kewujudan perhubungan Granger diantara pengaliran perdagangan Malaysia dengan pembolehubah makroekonomi bagi ujian perhubungan bivariate bahkan perhubungan multivariate Granger yang berasaskan VECM.

Hubungan dinamik diantara pengaliran perdagangan Malaysia dengan pembolehubah makroekonomi dapat dikenapasti dibawah fungsi tindak balas. Keputusan menunjukkan bahawa AFTA dan populasi mempunyai perhibungan positif dengan pengaliran perdagangan Malaysia, manakala pendapatan per capita bagi negara ASEAN yang telah dikenalpastikan dan jarak adalah berhubungan negative dengan pengaliran perdagangan Malaysia.

Kajian ini menunjukkan bahawa polisi perdagangan yang cekap akan meningkatkan pretasi pengaliran perdagangan bagi sesebuah negara. Ini akan sekaligus mencipta lebih banyak peluang pekerjaan dan dapat medorong pertumbuhan ekonomi.

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I certify that an Examination Committee met on 24th August 2002 to conduct the final examination of Goh Lim Thye on his Master of Science thesis entitled "Impact of AFTA on Malaysian Trade Flows: An Empirical Analysis based on Gravity Model" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

SUHAILA HAJI ABDUL JALIL, Ph.D.

Department of Economics
Faculty of Economics and Management
Universiti Putra Malaysia
(Member)

TAN HUI BOON, Ph.D.

Associate Professor
Department of Economics
Faculty of Economics and Management
Universiti Putra Malaysia
(Member)

MAD. NASIR HJ. SHAMSUDIN, Ph.D.

Professor
Department of Agribusiness and Information System
Faculty of Agriculture
Universiti Putra Malaysia
(Member)

ZULKORNAIN YUSOF, Ph.D.

Department of Economics
Faculty of Economics and Management
Universiti Putra Malaysia
(Member)



SHAMSHER MOHAMAD RAMADILI, Ph.D.

Professor/Deputy Dean
School of Graduate Studies,
Universiti Putra Malaysia

Date: 20 SEP 2002

This thesis submitted to the Senate of Universiti Putra Malaysia has been accepted as fulfillment of the requirements for the degree of Master of Science. The members of the Supervisory Committee are as follows:

TAN HUI BOON, Ph.D.

Associate Professor
Department of Economics
Faculty of Economics and Management
Universiti Putra Malaysia.
(Chairman)

MAD. NASIR BIN HJ. SHAMSUDIN, Ph.D.

Professor
Department of Agribusiness and Information System
Faculty of Agricultural
Universiti Putra Malaysia.
(Member)

ZULKORNAIN YUSOP, Ph.D.

Department of Economics
Faculty of Economics and Management
Universiti Putra Malaysia.
(Member)

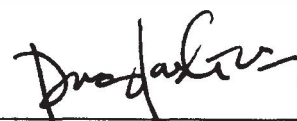
AINI IDERIS, Ph.D.

Professor / Dean
School of Graduate Studies
Universiti Putra Malaysia

Date:

DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.



Name: GOH LIM THYE

Date: 6/9/02

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LIST OF ABBREVIATIONS

AFTA	ASEAN Free Trade Area
APEC	Asian Pacific Economic Cooperation
FDI	Foreign Direct Investment
NAFTA	North American Free Trade Agreement

CHAPTER ONE

INTRODUCTION

The extension of the US-Canada Free Trade Agreement to include Mexico and further European integration associated with 'Europe 92' had focused attention on the rise of regional trading blocs. In a world economy which is widely viewed as moving towards a tri-polar structure, it is natural to ask whether ASEAN will follow North American and European moves towards greater regional integration during the late 80s.

Paul and Brian (1996) concluded that, there are evidences of sub-regional patterns of integration, together with a proposal for a full scale regional grouping, have already emerged in East Asia. Sub-regional arrangements include the 'Growth Triangle' between southern Malaysia, Singapore and Riau in Indonesia, the increasing integration of Hong Kong and Guangdong province and of Fujian province and Taiwan, the prospects for linkages in North East Asia involving China, the Korean Peninsula and Japan, and importantly, the formation of an ASEAN Free Trade Area (AFTA)¹.

The usual channels through which trade policy reform or liberalization could bring benefits through improved resource allocation within and cross industries (static gains) and through technical change, learning, and growth leading to improved productivity growth (dynamic gains). However, there is another channel by which trade liberalization can be expected to provide major benefits to the

¹ AFTA came into effect in January 1993 and involved the creation of Free Trade Area consisting of 330 million people and with a GNP in excess of US\$300 billion. The members of ASEAN are Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand.

performance of developing countries, namely through its competitive effect by fostering domestic competition on domestic pricing. If this channel were to be more widely recognized, then trade policy may be viewed as another effective policy to promote competition.

AFTA

Background.

At the Fourth ASEAN Summit in Singapore in January 1992, ASEAN initiated the ASEAN Free Trade Area, or AFTA, which laid out a comprehensive program of regional tariff reduction. Over the course of the next three years, the program of tariff reductions was broadened and accelerated, and a host of "AFTA Plus" activities were initiated, including efforts to eliminate non-tariff barriers and quantitative restrictions, and harmonize customs nomenclature, valuation, and procedures.

AFTA received a further boost at the December 1995 ASEAN Summit in Bangkok, when the ASEAN countries signed framework agreements for the intra-regional liberalization of trade in services, and for regional IPR cooperation. Subsequent to the December Summit, an industrial complementation scheme designed to encourage intra-regional investment was approved, and discussions were held on creating a free investment area within the region.

Summary of the AFTA tariff reduction & other regional economic cooperation Initiatives

Common Effective Preferential Tariff (CEPT). The CEPT is the mechanism by which tariffs on goods traded within the ASEAN region, which meet a 40%

ASEAN content requirement, will be reduced to 0-5% by the year 2003 (2006 for Vietnam, and 2008 for Laos and Myanmar). The tariff reductions are moving ahead on both the "fast" and "normal" tracks.

Tariffs on goods in the fast track will be reduced to 0-5% by the year 2000. Tariffs on goods in the normal track will be reduced to this level by 2003. Currently, about 81% of ASEAN's tariff lines are covered by either the fast or normal track.

ASEAN members have the option of excluding products from the CEPT in three cases: 1.) Temporary exclusions; 2.) Sensitive agricultural products; 3.) General exceptions.

Temporary exclusions refer to products for which countries are not prepared to begin lowering tariffs. Temporary exclusions include products in the plastics, vehicles, and chemicals sectors, and represent about 15 percent of the tariff lines in ASEAN. However, beginning in January 1996, each ASEAN country began moving 20 percent of its temporary exclusions each year on to either the fast or normal track. (Not including those for Laos and Myanmar).

A small number of sensitive agricultural products will be extended a deadline of the year 2010 for their integration into the CEPT scheme. In an agreement that has yet to be fully spelled out, the process of tariff reduction on these products will begin between 2000-2005, apparently depending on the country and the product.

General Exceptions refer to products which a country deems necessary for the protection of national security, public morals, the protection of human, animal or

plant life and health, and protection of articles of artistic, historic, or archaeological value. Approximately one percent of ASEAN tariff lines fall into this category.

The CEPT scheme will cover nearly 98 percent of all tariff lines in ASEAN by the year 2003; by then, the only products not included in the CEPT Scheme will be those in the General Exceptions category and sensitive agricultural products.

Table 1.1 Average CEPT Tariff Rates

Average CEPT Tariff Rates						
	1998	1999	2000	2001	2002	2003
Brunei	1.35	1.29	1.00	0.97	0.94	0.87
Indonesia	7.04	5.85	4.97	4.63	4.20	3.97
Laos	5.00	5.00	5.00	5.00	5.00	5.00
Malaysia	3.58	3.17	2.73	2.54	2.38	2.06
Myanmar	4.47	4.45	4.38	3.32	3.31	3.19
Philippines	7.96	7.00	5.59	5.07	4.80	3.75
Singapore	0.00	0.00	0.00	0.00	0.00	0.00
Thailand	10.56	9.75	7.40	7.36	6.02	4.64
Vietnam	6.06	3.78	3.30	2.90	2.89	2.02
ASEAN	5.37	4.77	3.87	3.65	3.25	2.68

Source: ASEAN Secretariat

The average CEPT tariff rate of products in the Inclusion List fell to 6.38% in 1997, from about 12.76% in 1993 at the start of the tariff reduction program. It is scheduled to fall to 2.25% by the year 2003.

Laos and Myanmar acceded to the CEPT agreement upon their entry into ASEAN in July of 1997. Under the terms of their participation in AFTA, they will each have ten years to meet the CEPT deadlines, and therefore will have tariffs down to 0-5% by January 1, 2008. As an initial step in their participation, each country submitted tariff reduction packages to the

October 1997 AEM meeting, which are summarized below;

Table 1.2 Summary of AEM meeting on Oct 1997

	Laos	% of total tariff lines	Myanmar	% of total tariff lines
Inclusion List	533	15	2,355	43
Temporary Exclusion List	2,820	79.4	2,987	54.6
Sensitive List	96	2.7	21	0.4
General Exception	102	2.9	108	2

Source: Joint Press Statement: eleventh meeting of the AFTA Council, October 15, 1997, Subang Jaya, Malaysia.

2001 CEPT Package. The 2001 package of tariff cuts under the CEPT consists of 55,680 tariff lines (84.7% of total tariff lines) in the Inclusion list; 8,660 tariff lines (13.4% of the total) in the Temporary Exclusion List; 829 tariff lines (1.3% of the total) in the General Exception list, and 360 tariff lines (0.6% of the total) in the Sensitive list.